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CLAIMS

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[Claim(s)]

[Claim 1] The multimedia data-processing method characterized by memorizing the aforementioned multimedia data and its attribute information for a storage means by displaying the graph illustrating from the maximum which the predetermined attribute information about the multimedia data which should be memorized can take to the minimum value, and specifying the position of the aforementioned graph.

[Claim 2] The aforementioned multimedia data are the multimedia data-processing method according to claim 1 characterized by including image data.

[Claim 3] The aforementioned multimedia data are the multimedia data-processing method according to claim 2 characterized by including voice data.

[Claim 4] The multimedia data-processing method according to claim 2 characterized by displaying the picture according to the aforementioned multimedia data which have the attribute value near the aforementioned position in case the position of the aforementioned graph is specified.

[Claim 5] The aforementioned attribute information is the multimedia data-processing method according to claim 1 characterized by displaying the graph about two or more aforementioned kinds of attribute information on one screen including two or more kinds of information.

[Claim 6] The multimedia data-processing method characterized by searching the aforementioned multimedia data by displaying the graph used at the time of the aforementioned storage in a method according to claim 5, and specifying the predetermined range of the aforementioned graph.

[Claim 7] The multimedia data-processing method characterized by memorizing the aforementioned multimedia data and its attribute information for a storage means by displaying the graphics illustrating the value which the predetermined attribute information about the multimedia data which should be memorized can take, and specifying the position of the aforementioned graphics.

[Claim 8] The multimedia data processor equipped with an input means to input multimedia data, a display means to display the graphics illustrating the value which the attribute information about the aforementioned multimedia data can take, a directions means to direct the position on the aforementioned graphics, and a storage means to memorize the aforementioned multimedia data and attribute information according to directions by the aforementioned directions means.

[Claim 9] For the aforementioned multimedia data, the aforementioned display means is a multimedia data processor according to claim 8 characterized by displaying the picture according to the aforementioned image data including image data.

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DETAILED DESCRIPTION

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## [Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the art and equipment of multimedia data, and relates to the method and equipment with which data, such as a document, a picture, and voice, are registered and searched especially.

[0002]

[Description of the Prior Art] Although the database for registering and searching various data is known conventionally, in such a conventional database, a character and a number are treated, and the scale of a system is also large and construction and management of a database are also restricted to the specific man.

[0003] To such a database, a character or not only a number but multimedia data, such as a picture and voice, come to be added to a database in recent years, and how to use a database also in a small-scale and personal direction called a picture library gradually is spreading from the large-scale database centering on a conventional character and a conventional number. And construction and management of a database have also been increasing, when the user who uses carries out personally from what the conventional specific operator was performing.

[0004] Moreover, in connection with the ability of the above-mentioned multimedia data to operate it now on a computer easily, multimedia data were managed in library and the application software called catalog software of taking up a required thing focusing on those list displays has also appeared. Catalog software makes simple operation of the input and registration of the attribute information as a keyword to data, and the reference function is also easy.

[0005] The example of catalog software is shown in drawing 12. Drawing 12 is the catalog of a still picture and the list of the pictures into which the database is registered as shown in the left-hand side of drawing is displayed. If a user specifies arbitrary pictures from these pictures and registration is directed, a registration screen as shown in the right-hand side of drawing will appear.

[0006] The field which inputs each as the item of each attribute information is established in this registration screen, and registration is performed by inputting a value into this input field. The field which shows a photography place is displayed in this example. A user will input a place name from a keyboard here.

[0007] Moreover, it is also possible to set up and register the item showing the ambiguous image that are a fresh picture as attribute information in catalog software, or it is bright sound. And in the example of drawing 12, the attribute information what freshness this picture of "the degree of freshness" has as an item showing such an ambiguous image is established. And the user is inputting the numeric value also to this field.

[0008]

[Problem(s) to be Solved by the Invention] In construction of such a database, as rating and registration of attribute information has become the cause kept at arm's length by the user.

[0009] Although a user generally inputs this attribute information from a keyboard, when creating a

database, whenever data are updated, of course, you have to perform this input.

[0010] Moreover, a value with the exact data inputted from a keyboard is required, and, also mentally, these serve as a burden as an increase in rating for a user.

[0011] Furthermore, when searching, a character and a numeric value are inputted to the registered value, reference is directed, and such reference work also serves as a burden of the user using a database.

[0012] Since it is such, although a database spreads to a general user, it serves as a reason kept at arm's length from a user who mainly uses word processor work as a center with the personal computer.

[0013] Moreover, even if it makes it catalog software, the input of attribute information drives in a character and a numeric value from a keyboard like the conventional database, and there is no change in an exact value being required. Moreover, the same is said of reinputting and directing the value with which it registered also at the time of reference.

[0014] Furthermore, when an item ambiguous as mentioned above is set up as attribute information, it is a burden for the user what numeric value should be inputted and to what numeric value it should refer.

[0015] In consideration of the aforementioned technical problem, this invention aims at offering the method and equipment which can use a database effectively by performing registration and reference of data by the easy method.

[0016]

[Means for Solving the Problem] In order to solve the technical problem currently held conventionally and to solve the aforementioned purpose, this invention is constituted by displaying the graph illustrating from the maximum which the predetermined attribute information about the multimedia data which should be memorized can take to the minimum value, and specifying the position of the aforementioned graph so that the aforementioned multimedia data and its attribute information may be memorized for a storage means.

[0017] Moreover, it has an input means to input multimedia data, a display means to display the graphics illustrating the value which the attribute information about the aforementioned multimedia data can take, a directions means direct the position on the aforementioned graphics, and a storage means memorize the aforementioned multimedia data and attribute information according to directions by the aforementioned directions means, and other invention of this application is constituted.

[0018]

[Function] Since this invention was constituted as mentioned above, a user needs to input neither a direct character nor a numeric value in the case of registration and reference of data, and it becomes possible to mitigate a user's burden.

[0019]

[Example] Hereafter, the example of this invention is explained in detail using a drawing.

[0020] Drawing 1 is the block diagram showing the composition of the database system as an example of this invention.

[0021] The display for setting to drawing 1 and 1 displaying the picture registered and searched, The video board for 2 connecting a display 1 and the bus 9 in a personal computer, The control unit containing the keyboard mouse for 3 inputting attribute information etc. into a database etc., The SCSI board for 4 connecting disks, such as a magneto-optic disk and CD-ROM, and 5 connecting a disk 4 and a bus 9, The sound board for the loudspeaker for 6 carrying out [ voice / which was registered and searched ] a monitor and 7 connecting a loudspeaker 6 and a bus 9, The Ethernet board for 8 connecting an external network and a bus 9, The bus by which 9 performs transmission of a control signal and various data between each part of a system, RAM for CPU for 10 controlling operation of a system and 11 loading the program of operation currently recorded on the hard disk 12, The floppy disk by which the multimedia data of the above-mentioned [ 13 ] are memorized, and 14 are the accumulation sections for memorizing multimedia data and attribute information.

[0022] Database creation / reference program of this system is memorized by the hard disk 12, when a user directs starting of a system, is loaded to RAM11 and performed by CPU10.

[0023] Moreover, the multimedia data used as the data of a database are memorized by the hard disk 12

or the disk 4, and the floppy disk 13 grade, and can be inputted also from the outside through a network. A user operates it on a database program using directions members, such as a keyboard and a mouse, and performs registration and reference to the database of multimedia data. A document and a picture are displayed on a display 1 and, as for the monitor of data, voice is reproduced by the loudspeaker 6.

[0024] Registration of multimedia data is explained in such composition.

[0025] Drawing 2 is drawing for explaining the graphics for registration. As shown in drawing 2, when inputting the attribute information of a photography place, an actual map is displayed, a picture icon is moved by the control unit 3, and it is made to move to the position of hope onto a display 1 (drag drops). Thus, by constituting, a user can do registration work only by operation by the mouse on the occasion of registration of a photography place from what had inputted the actual name of a place from the keyboard conventionally.

[0026] CPU10 detects the position dropped on the map, detects the name of a place which corresponds from the hard disk 12 which stores the name of a place on a map, and is made to display it on the field of a photography position. If this name of a place is satisfactory for a user, he will operate a control unit 3 further and will end registration operation of a photography place.

[0027] The database program has from the beginning the graphics which show this name of a place, and a user registers a photography place by choosing the graphics which show this name of a place.

[0028] In addition, although the case of a place was explained as attribute information here, if it is the item which can express on graphics the range which attribute information, such as displaying the graphics which show a calendar to the attribute information of the date, can take, it can register by the same method.

[0029] Moreover, more than one may be prepared as a map to display, and the composition which a user chooses and uses may be used.

[0030] Next, registration of the data at the time of setting up an image ambiguous as attribute information is explained. In this example, in data registration, the graph which shows the degree of freshness is displayed, and it registers by the method of dropping there by the icon.

[0031] Drawing 5 is drawing for explaining such a registration method, and shows the situation at the time of registering the degree of freshness.

[0032] If the degree of freshness is specified as attribute information in the case of data registration, the screen shown in drawing 5 will be displayed on a display 1. On a screen, the graph which shows the degree of freshness, and the icon of the multimedia data (drawing image data) to be registered from now on are displayed. A user chooses this picture by directions members, such as a mouse, moves this to the arbitrary positions on a graph, and it registers as a degree of freshness of the data by terminating movement there.

[0033] The value at this time sets the position of the leftmost on a graph to 0, and registers the several n pixel of the specified position as a degree of freshness among the numbers of pixels on the screen to the rightmost position. This is performed when CPU10 detects the specified position on a graph. Since the range of number in this case which can be taken made the unit the size (the number of pixels to which it shuts on a screen) of the graph created in this example, it can also set [ also changing a range of number or ] up the range of a value apart from the size of a graph as the another specification method possible by changing the size of a graph (from zero to 100).

[0034] Moreover, in this example, in order to use also for the attribute display of the data, or the specification display at the time of reference the graphical representation used for registration, a user does not need to know for what numeric value it is actually managed in the case of processing by CPU10. Then, the number of pixels on the screen which is the resolution on a screen is used as a range of a value.

[0035] Although the above-mentioned example explained the case where a user registered the degree of freshness only with reference to the image data considered as registration use, if you can register as a relative value, comparing with the degree of freshness about the already registered data in case it registers, it is much more convenient. Then, as shown in drawing 4, you may constitute so that the already registered multimedia data which are located before and after it in the form which sandwiches

the cursor on a graph may be displayed. Operation in this case is explained using the flow chart of drawing 5.

[0036] If a menu called a display in order is chosen at the time of registration of data, CPU10 will detect the frequency  $n$  of the degree of freshness from the position of the cursor on a graph first (Step S101). And the data which have the frequency of under  $n$  are searched (Step S103), and when there are data, the data which have maximum in it further are chosen (Step S103,104). When there are two or more data which have the maximum at this time, they may all be chosen, and you may choose only one from the inside. As criteria to choose, what took up previously, what is new as a file can be considered. And after choosing data, the corresponding picture is displayed on a display 1 (Step S105).

[0037] Next, it refers to the data more than  $n$  similarly, and the thing near  $n$  is chosen and displayed (Step S 106-109).

[0038] A user checks this indicative data, if he judges that this hit is sufficient, he will drop here, otherwise, he does same operation in another position, and should just compare registered data.

[0039] As explained above, when registering the attribute information on an ambiguous image, a graph can be displayed, and the burden of the determination of attribute value can be made light by registering using this graph at a user.

[0040] Next, the situation at the time of displaying the data registered in this way is shown in drawing 6.

[0041] Not a numeric value like before but a graph and the registered position are displayed on the column which shows the degree of freshness so that more clearly than drawing. Moreover, when a user specifies the range which a numeric value can take as mentioned above, it may combine with a graph and a numeric value may be displayed.

[0042] Next, the case where the data registered in this way are searched is explained. Drawing 7 expresses the screen displayed on a display 1, when the degree of freshness is chosen as a keyword at the time of reference (attribute information).

[0043] If the item of the degree of freshness is chosen by the control unit 3 at the time of reference, the screen of drawing 7 will be displayed. And if the reference range on a graph is specified in a directions member, CPU10 will detect the minimum frequency and the maximum frequency of the range. And the data in the range which corresponded out of the data memorized by the accumulation section 14 are read from the accumulation section 14, and the picture according to the read image data is displayed on the applicable image display area in the screen lower part.

[0044] As explained above, since it is operated using common graphics at the time of each operation of registration, a display, and reference and registration / reference operation can be performed sensuously and freely, by this example, it becomes possible to mitigate a user's burden. Moreover, it becomes possible to offer the method optimal about reference of the data "such sensibility", for example.

[0045] Although one attribute information was displayed on the graph and registration and the case where it searched were explained in the above-mentioned example, registering and searching two attribute information similarly is also considered. Drawing 8 is drawing showing the situation at the time of choosing two, the degree of luminosity, and the degree of freshness, as attribute information, and indicating by two-dimensional.

[0046] Thus, although a burden will increase above when treating one parameter if a user does the direct input of two or more related parameters, data can be easily registered by dragging and dropping data on this two-dimensional graph.

[0047] Moreover, at the time of reference, the reference range is specified on the two-dimensional graph shown in drawing 8 like the above-mentioned example. And the picture corresponding to the data in this reference within the limits is displayed on screen right-hand side.

[0048] Furthermore, it is the same as that of the above-mentioned example to display the picture according to the data which adjoined at the time of registration of data. The frequency specified on the two-dimensional graph explains operation at the time of considering as the degree  $nb$  of luminosity, and the degree  $nc$  of freshness using the flow chart of drawing 9.

[0049] First, CPU10 detects Frequencies  $nb$  and  $nc$  from the position of the cursor on a graph (Step

S201). And the completely same frequency as the minimum reference range, for example, detection frequency, is first set up as a reference range (Step S202). If the reference range is set up, when it is detected and detected whether data are in reference within the limits, the applicable data will be memorized to RAM11 (Step S 203-205).

[0050] And it judges whether it became, or more [ the number of data was set up ] k [ several ], and when it is not more than k, it searches whether other applicable data are in the again same reference within the limits.

[0051] Here, when there are no applicable data in the reference within the limits same at Step S204, for example, the degree of luminosity and the degree of freshness expand the reference range at a time by 1 level approximately (Step S208), this range judges whether it is the maximum, and when it is not the maximum (Step S209), data retrieval is again performed in this range.

[0052] When the reference range is already the maximum at Step S209, the picture according to the data memorized by RAM11 at Step S207 and the number of detection data display the purport which were than the number k of setup, and are completed.

[0053] Moreover, the picture according to the data detected when the number of detection data became at Step S206 more than the number k of setup is displayed, and it ends. Furthermore, when data are not detected, one displays that and it is completed. The example of a display at this time is shown in drawing 10 . In this case, the set point shows the case where three applicable data are detected by 3.

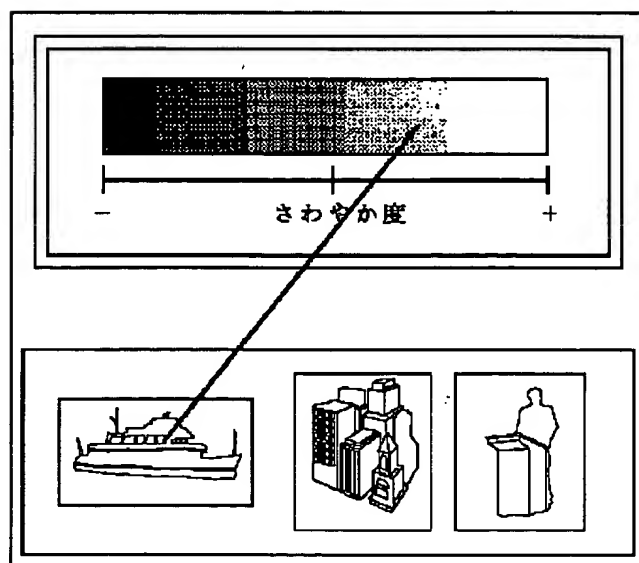
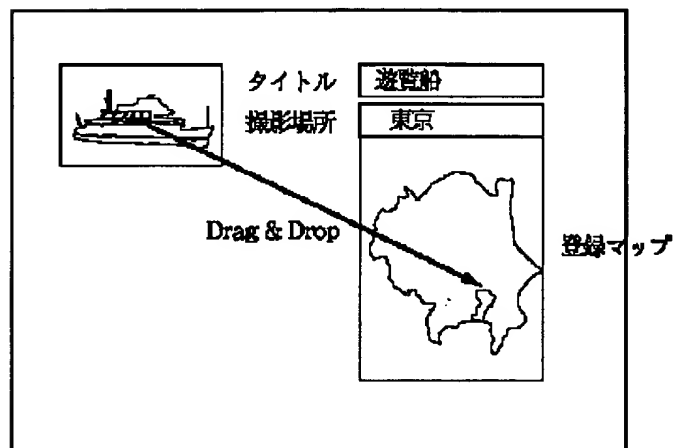
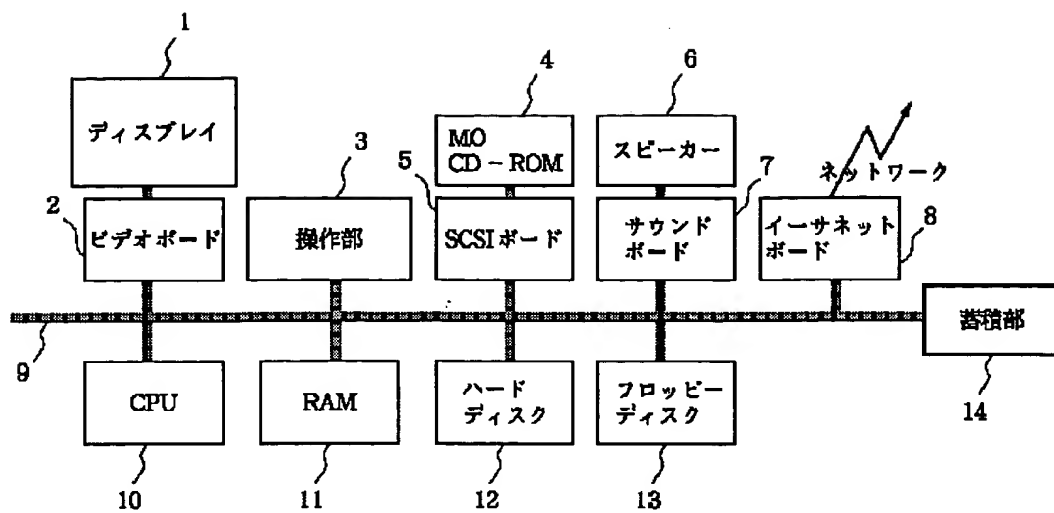
[0054] Thus, since the two-dimensional graph is used when also setting to this example and registering and searching two attribute information, while a user's burden is mitigable, registration and reference of data can be performed by easy operation.

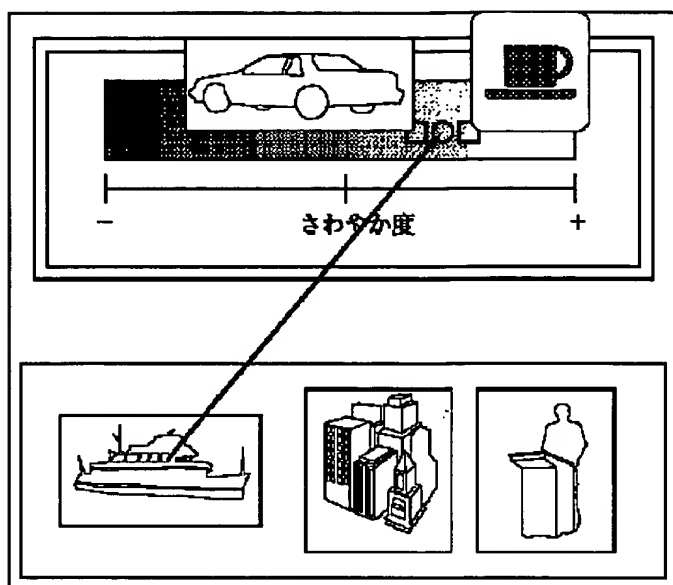
[0055] In addition, the number of data registered at once may be two or more. Drawing 11 is drawing having shown the situation in the case of registering six parameters. Although it becomes a serious burden that a direct user inputs six related parameter value in this case, it can display as graphics like drawing 11 , and can register by easy operation by specifying by the icon.

[0056]

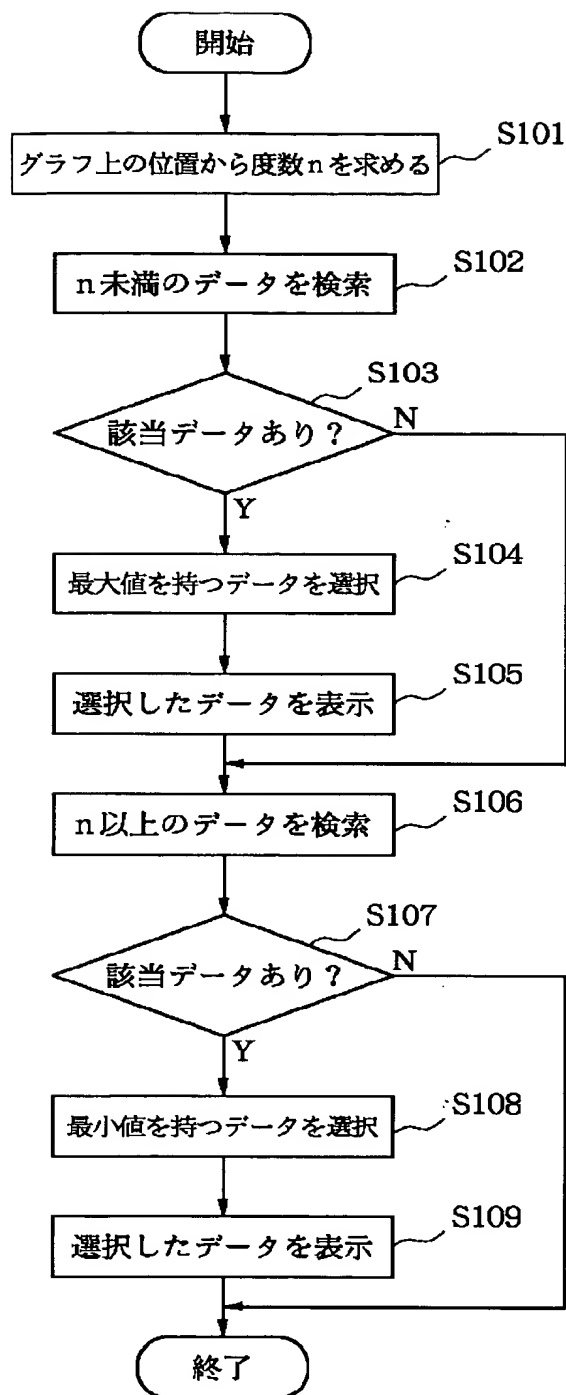
[Effect of the Invention] As explained above, since multimedia data and attribute information are memorized by this invention's displaying the graph and graphics illustrating the value which the attribute information on the multimedia data which should be memorized can take, and specifying the position of these graphs or graphics, it becomes simply [ data storage operation ] and sensuous, and it becomes possible to mitigate a user's burden.


[0057] Furthermore, it becomes possible by using a graph common at the time of a data storage and reference to improve the operability not only at the time of storage but the time of reference.












タイトル

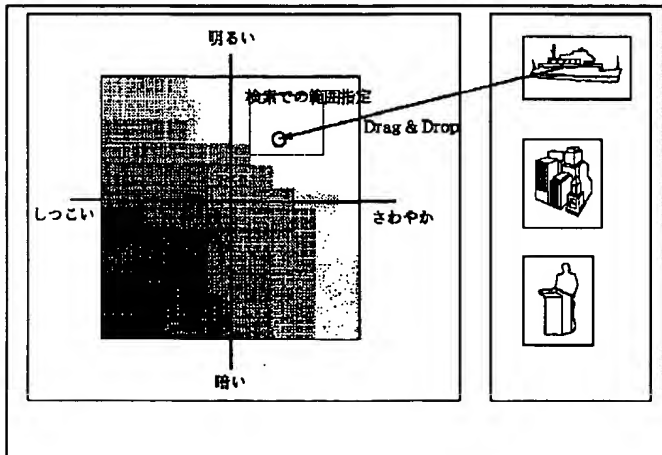
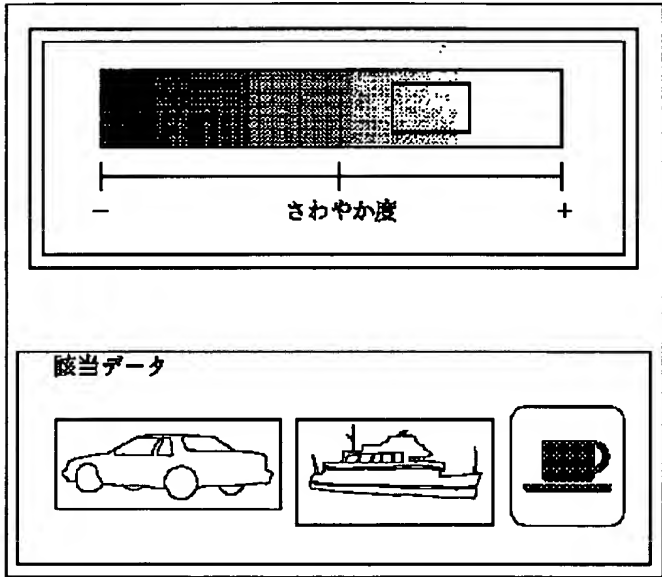
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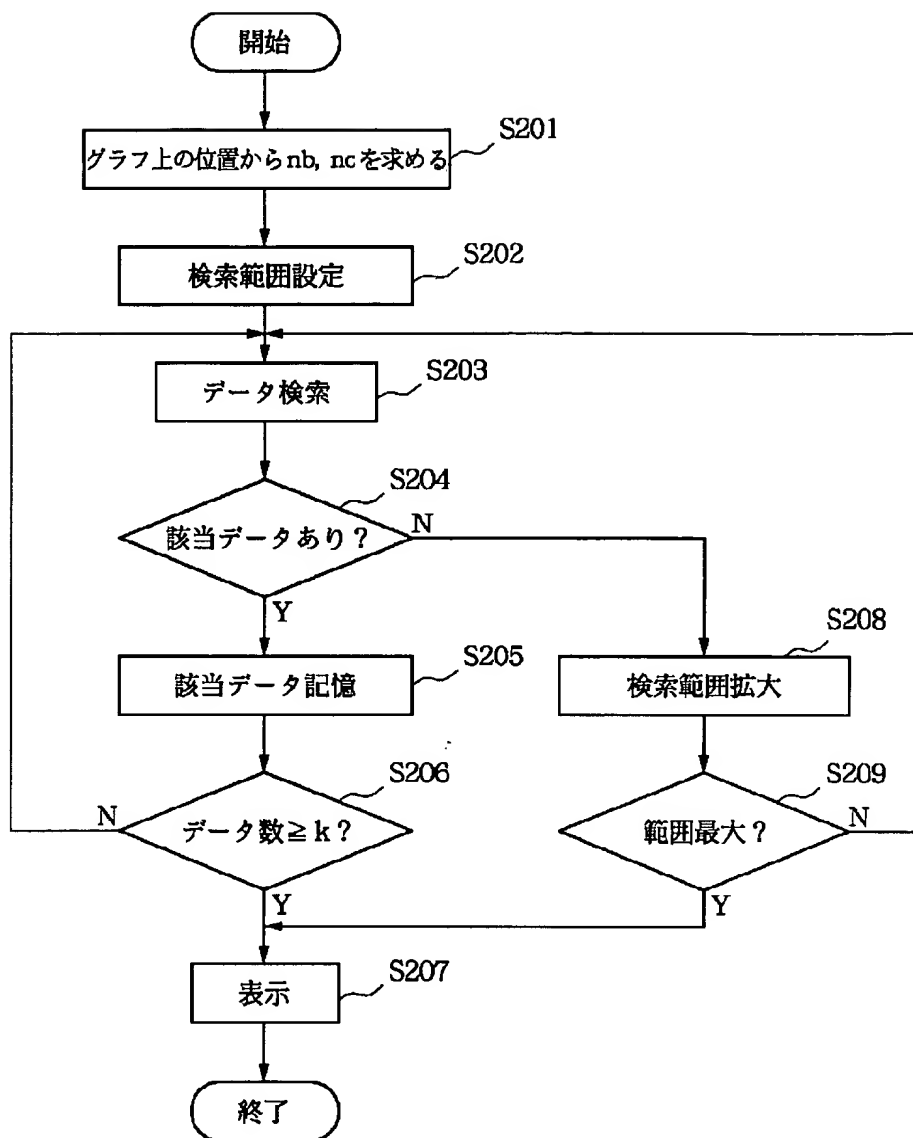
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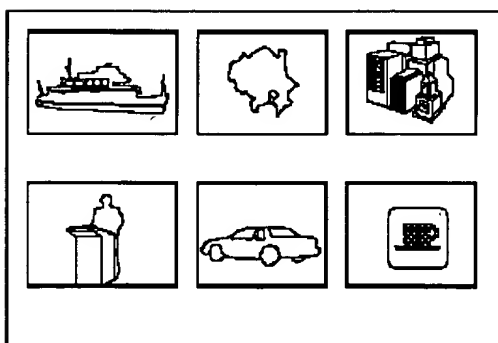
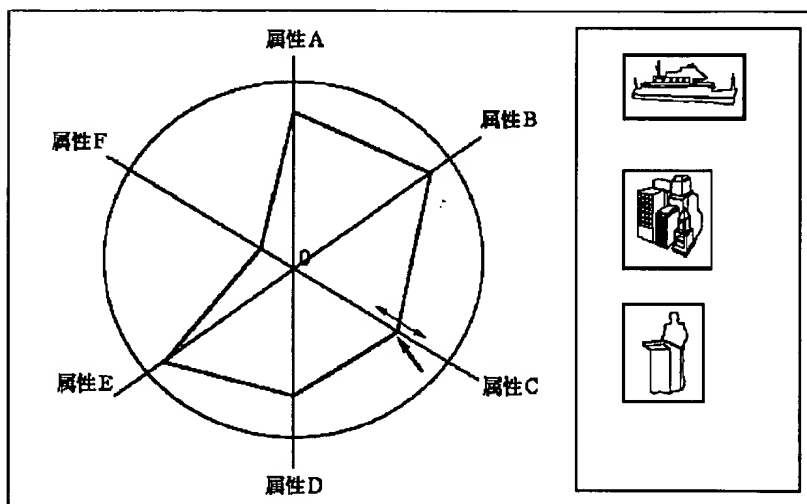
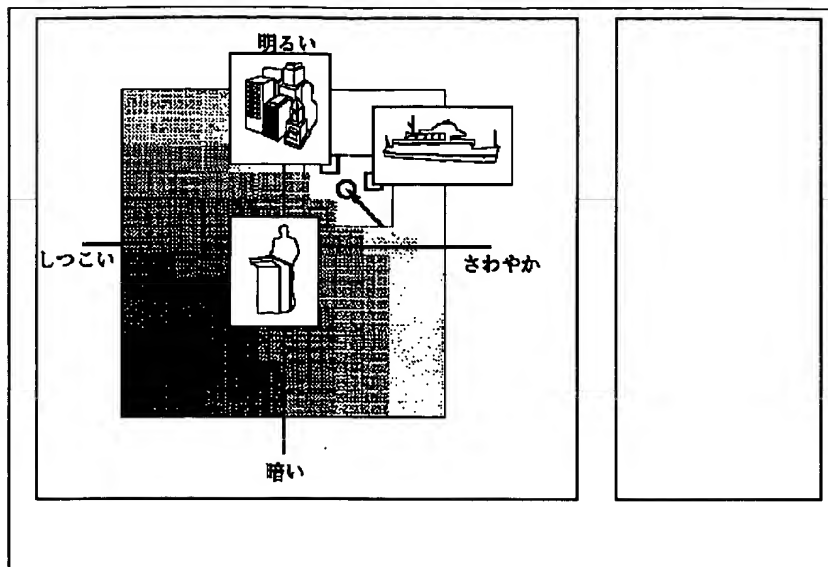
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